

**\*77700\***

Friday, December 16, 2011 12:51:45 PM

**\*N900040100\***

Setup Start **\*NS1\***

Stop \*NS2\*

**Start Date:** 12/16/2011      **Start Qty:** 6.00

**\*6\***

**Cust Item ID:**

**Required Date: 1/6/2012      Req'd Qty: 6.00**

\*6\*

**Customer:**

**Reference:**

Run Start \*NR1\*

**Approvals:**                      **Process Plan:**

Date: 1/2/16

### Tooling:

Date:

**QC:**

Date:

**SPC (Y/N):**

Date:

**\*NR2\***

[illegible]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 77700

**\*77700\***

Page 2

Friday, December 16, 2011 12:51:45 PM

Item ID: D3531-1

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Bracket

Start Date: 12/16/2011 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 1/6/2012 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Run Start

**\*NR1\***

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

**\*NR2\***

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

**\*130\***

Brake NC

Brake NC

NC BRAKE

Memo

Bend as per Dwg D3531

0.00

0.00

SB 12/16/14

(6)

140

**\*140\***

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

SB 12/16/14

(6)

150

**\*150\***

HandFinish

Hand Finishing

Chemical Conversion Coat per QSI005 4.1

Memo

0.00

0.00

6 BL 12-2-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 77700****\*77700\***

Page 3

Friday, December 16, 2011 12:51:45 PM

Item ID: D3531-1

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Bracket

Start Date: 12/16/2011 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 1/6/2012 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Run Start

**\*NR1\***

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Stop

**\*NR2\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

QC3- Inspect Part Finish

0.00

**\*160\***

QC

Memo

0.00

Quality Control

6X4/M/L 12/02/14

170

Identify as per dwg & Stock Location: GA

0.00

**\*170\***

Packaging

Memo

0.00

Packaging

GP 12/02/14 (6)

180

QC21- Final Inspection - Work Order Release

0.00

**\*180\***

QC

Memo

0.00

Quality Control

12/2/17

MF  
12-02-17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, December 16, 2011 12:51:49 PM

Page 1

Work Order ID: 77700

**\*77700\***

Parent Item: D3531-1

**\*D3531-1\***

Parent Item Name: Bracket

Start Date: 12/16/2011

Required Date: 1/6/2012

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP Rev:A New Issue 07-09-24 EC verified by DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M6061T6S.040

Purchased

No

100

sf

54.4100

0.3783

2.389263

**\*M6061T6S 040\***

\*\*

W/12.02.07

6061-T6 .040 Sheet

B# 120218

Location

Loc Qty

Loc Code

MAT021

54.41

113004

5.5

117653

48.91

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

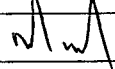



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	77700
<b>Description:</b> Bracket		<b>Part Number:</b>	D3531-1
<b>Inspection Dwg:</b> D3531 <b>Rev:</b> A		<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST



☒ First Article      ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.196	+0.005/-0.001	0.196	✓		VERN	HB-03
Ø0.129	+0.005/-0.001	0.129	✓		VERN	" "
0.33	+/-0.030	0.336	✓		VERN	" "
2.840	+/-0.010	2.844	✓		VERN	" "
1.70	+/-0.030	1.710	✓		VERN	" "
1.45	+/-0.030	1.45	✓		VERN	" "
0.38	+/-0.030	0.379	✓		VERN	" "
0.19	+/-0.030	0.170	✓		VERN	" "
5.88	+/-0.030	5.88	✓		VERN	" "
12.66	+/-0.030	12.66	✓		W.T	HB-01
0.600	+/-0.010	0.602	✓		VERN	HB-03
1.77	+/-0.030	1.77	✓		VERN	" "
1.24	+/-0.030	1.23	✓		VERN	" "
1.16	+/-0.030	1.15	✓		VERN	" "

<b>Measured by:</b>	
<b>Date:</b>	12-22-07

<b>Audited by:</b>	
<b>Date:</b>	12/22/07

<b>Prototype Approval:</b>	N/A
<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	07.10.15	New Issue	KJ/EC/DD 	

48  
645

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

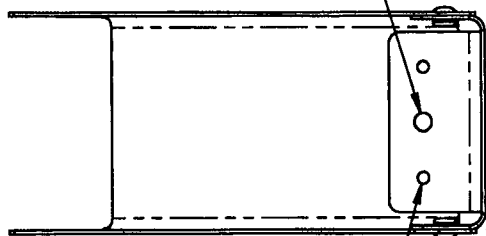
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



DESIGN CB	DRAWN BY CB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED LE	APPROVED [Signature]	DRAWING NO. D3531	REV. A SHEET 1 OF 3
DATE 07.06.19	TITLE BRACKET ASSEMBLY		SCALE 1:2
REV A	DATE 07.06.19	DESCRIPTION NEW ISSUE	

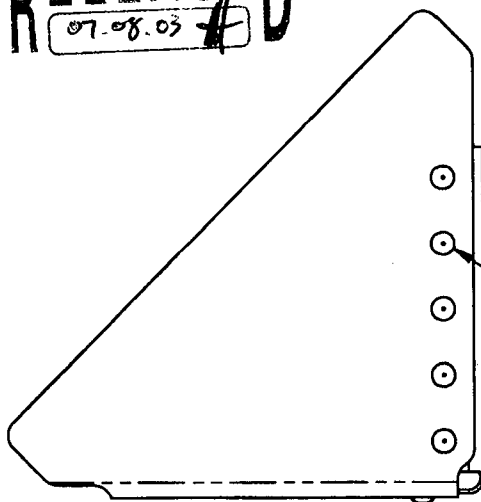
4  
TRANSFER DRILL #9 ( $\phi 0.196$ )



TRANSFER DRILL #30 ( $\phi 0.129$ )  
INSTALL MS20470AD4-4 RIVET  
(2 PLACES)

4

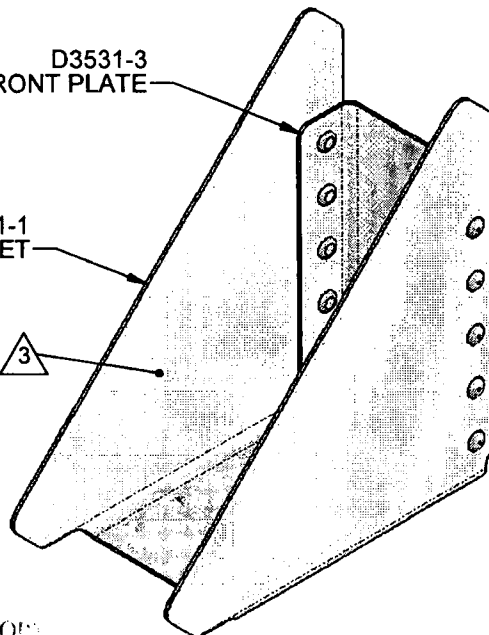
RELEASED  
07-08-03



D3531-3  
BRACKET FRONT PLATE

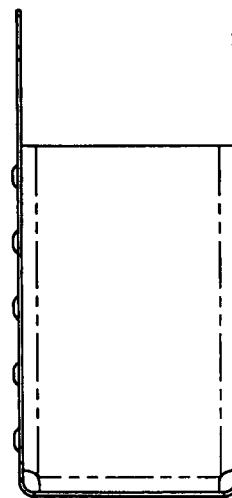
D3531-1  
BRACKET

3



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 77760  
21-12-16

MS20470AD4-4  
(10 PLACES)



### D3531-041 BRACKET ASSEMBLY

#### NOTES:

- 1) FINISH: POWDER COAT ASSEMBLY BLACK  
SANDTEX (4.3.5.7) PER DART QSI 005 4.3  
ALL PARTS
- 2) ASSEMBLE PER DART QSI 003
- 3) IDENTIFY WITH DART P/N "D3531-041" USING  
WHITE MARKER ON INSIDE OF BRACKET  
ASSEMBLY, WHERE INDICATED
- 4) TRANSFER DRILL HOLES FROM D3531-1 BRACKET  
THROUGH D3531-3 BRACKET FRONT PLATE  
BEFORE FINISHING

#### PARTS LIST

QTY.	P/N	DESCRIPTION
X	D3531-041	BRACKET ASSEMBLY
1	D3531-1	BRACKET
1	D3531-3	BRACKET FRONT PLATE
12	MS20470AD4-4	RIVET

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

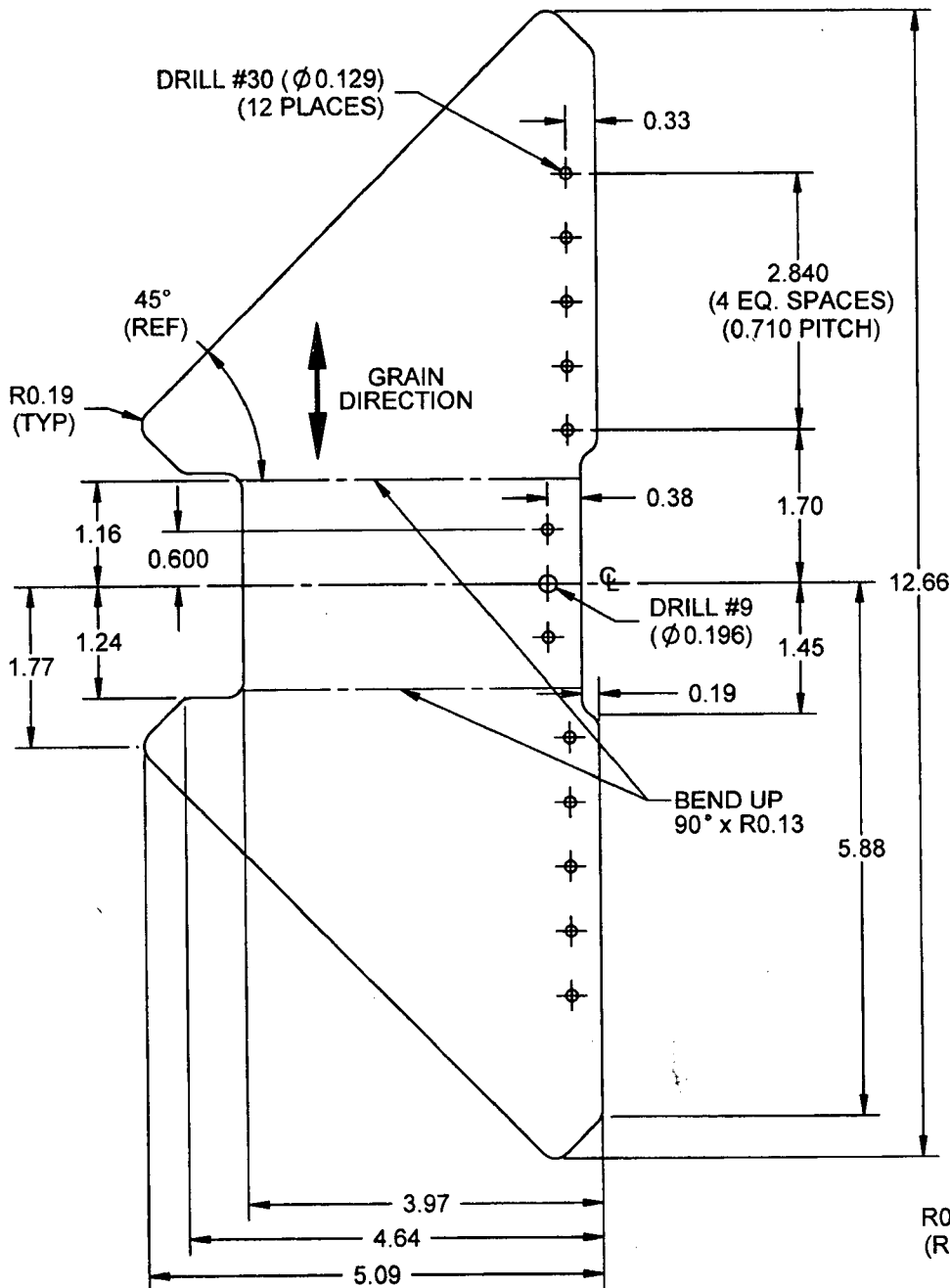
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

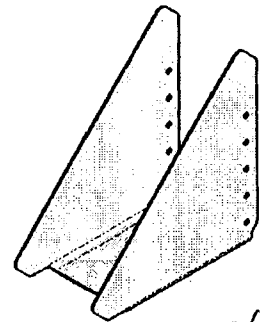
**NOTE:** Date & initial all entries



DESIGN <b>CB</b>	DRAWN BY <b>CB</b>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <b>LE</b>	APPROVED <b>[Signature]</b>	DRAWING NO. <b>D3531</b>	REV. A SHEET 2 OF 3
DATE <b>07.06.19</b>		TITLE <b>BRACKET ASSEMBLY</b>	SCALE 1:2

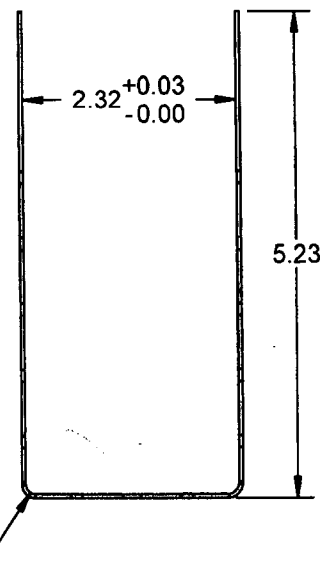


**D3531-1F FLAT PATTERN**



77700

**RELEASED**  
07-08-03



**D3531-1 BRACKET**

**NOTES:**

- 1) MATERIAL: ALUMINUM 6061-T6/T62 SHEET, 0.040 THICK PER QQ-A-250/11 OR AMS 4025 OR AMS 4027 (REF DART SPEC M6061T6S.040)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP CORNERS TO 0.010 MAX
- 6) PART IS SYMMETRIC ABOUT  $\phi$

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

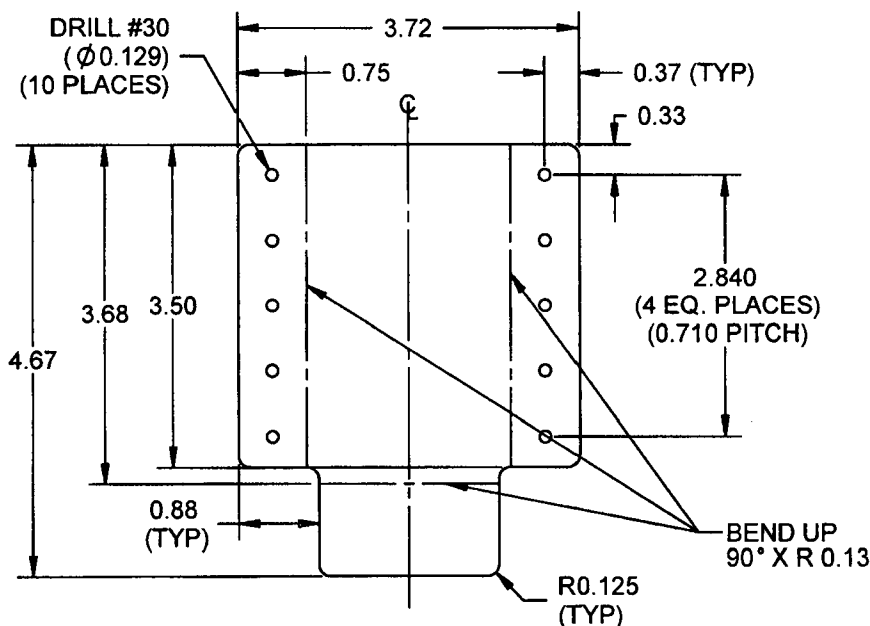
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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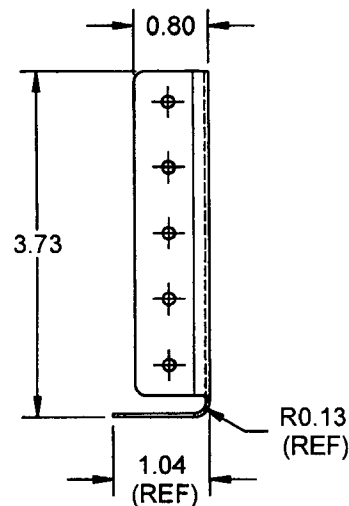
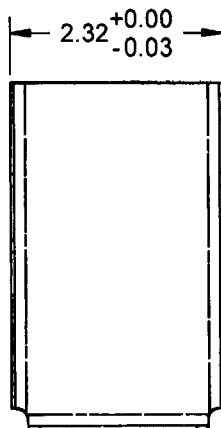
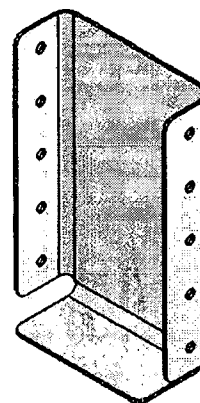


DESIGN <i>CB</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>LE</i>	APPROVED <i>#</i>	DRAWING NO. D3531	REV. A SHEET 3 OF 3
DATE 07.06.19		TITLE BRACKET ASSEMBLY	SCALE 1:2



**D3531-3F FLAT PATTERN**

**RELEASED**  
07.28.03 *#*



**D3531-3 BRACKET FRONT PLATE**

**NOTES:**

- 1) MATERIAL: ALUMINUM 6061-T6/T62 SHEET, 0.040 THICK PER QQ-A-250/11 OR AMS 4025 OR AMS 4027 (REF DART SPEC M6061T6S.040)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP CORNERS TO 0.010 MAX
- 6) PART IS SYMMETRIC ABOUT  $\phi$

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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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